

## The T1600 Brings Energy Efficiencies to Networking

The desire in business to be associated with “green” designations has grown exponentially over the last year, with many companies announcing initiatives aimed at reducing their eco-impact. There have been admirable strides made by many consumer brands, even including some seemingly unlikely sources, such as automotive companies. For technology, the focus has typically centered on the computing and general purpose processing industries. However, Juniper Networks, the leader in high-performance networking, is working to change this focus by bringing energy efficiencies to the networking industry.

The implications of continued stresses on energy resources and the potential effects of excessive consumption are hard to ignore — this isn’t a passing fad. Routers, switches, and service layer technologies (such as security and WAN optimization) form the underlying foundation of the Internet and worldwide communications infrastructure, their ubiquity makes them an important part of the social consciousness. As a result, Juniper believes it must not only be an enabler of accelerated globalization for customers, but also act as a proponent for improving energy efficiency on a global scale.

There are technology limitations and natural evolution that play a role in how much Juniper can push the boundaries, however, the company has been taking important steps, starting with the core of the network with the introduction of the T1600 - a core router that can deliver 25 percent more routing capacity at half the footprint and with up to 40 percent less power than competing solutions. In addition, the solution follows Juniper’s commitment to reusing hardware and line cards whenever possible to reduce waste, providing both environmental and economic benefit. The T1600 reuses the existing T640 chassis, which means customers can upgrade their solutions to achieve the industry-leading 1.6 terabytes of throughput in a single chassis, without needing to dispose of their existing hardware.

With more than 105 units booked and 77 units shipped by the end of the first quarter of 2008, the first full quarter of shipment, the T1600 made headlines by surpassing the ramp of Cisco’s CRS-1, which reached the same 100 unit milestone only after a full year, including trial systems. Customers understand and appreciate both the investment protection and seamless in-service upgrade path, which has helped drive strong growth and more demand for Juniper’s entire T-series family. Since the introduction of the T-series core routers in 2002, Juniper has shipped more than 4,000 units worldwide, representing deployments in more than 200 production networks around the world. In fact, 1,000 T-series units were shipped in 2007 alone. Again, it outperformed Cisco, which had 1,800 CRS-1 shipments announced as of March 2008.

### Juniper Networks T1600



The T1600 delivers energy efficiencies without affecting functionality. This is important to customers under increasing pressure to accelerate the roll out of new applications and services, while reducing operational costs. This requires a high-performance network infrastructure that delivers speed, reliability, and security at scale, without compromise.

As both business and consumer end-users leverage more content on the Web (including collaboration applications, video on demand (VOD), and voice over IP (VoIP)), businesses are building out their resources to support more content. Deploying servers and related infrastructure equipment to try to keep up with escalating demands has many companies struggling with basic space and cost issues. According to a 2006 study by Nemertes, a business’ average storage needs are growing anywhere from 20 to 150 percent a year, with servers growing by 11 percent and applications increasing by 10 percent. As a result, data centers that house the majority of a business’ resources have seen a doubling of energy consumption and heat generation since 2000, according to a 2007 survey by Advanced Micro Devices.

Furthermore, server facilities accounted for 1.5 percent of total U.S. electricity consumption in 2006, according to a study by the U.S. Environmental Protection Agency.

Obtaining a facility that can support the power and cooling needs of an ever-increasing facility is one problem — exemplified by companies such as Google and Microsoft, which have been building data centers in close proximity to power plants and water supply areas. Managing the energy costs of these data centers is another — energy costs of a system are on the verge of overtaking the capital expense of these systems. Businesses can end up paying more for electricity than for the bandwidth or servers themselves.

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The T1600 helps customers — including two of the top five European service providers and the top U.S. cable multiple service operators (MSOs) — deliver next-generation services based on IP/MPLS, such as video (often through multicast or multipoint label-switched paths (LSPs)), VoIP (via differentiated services and traffic engineering), and other content-rich, multi-gigabit data flows. The T1600 provides high-density inter-point of presence (PoP) connections at 10/40 Gbps and is heavily used for higher speed intra-PoP cross-connects. It can connect directly to optical transport equipment and simplifies network architecture via generalized MPLS (GMPLS) provisioning and control. The T1600 is frequently the core router of choice for many organizations, due to its industry-leading density and the highly stable and feature-rich JUNOS™ software.

Tiscali International Network (TINet), a carrier exclusively dedicated to the wholesale IP/MPLS market, recently announced its purchase of the T1600 to scale its core infrastructure and support the growing demand for multiplay services. TINet has the largest IPv6 network in place and operates a Tier-1 IP/MPLS network, which covers three continents and more than 100 POPs worldwide, including the United States, Canada, Hong Kong, and, as of July 8, 2008, Singapore.

“Our advanced services are simple and fast to deploy,” said Maurizio Binello, chief operating officer of TINet. “Our clients have come to expect a reliable service that is backed up with expert support made available throughout the entire network. With the addition of the T1600, we can increase network capacity in line with our escalating service demands around the world, while maintaining our value proposition of high quality service on streamlined costs.”

Juniper understands there is still a long way to go to achieve optimal energy efficiency, but Juniper is definitely committed to taking the actions necessary to get there. Juniper sees energy efficiency as a big step forward for the networking industry, and is dedicated to furthering the environmentally sound practices that support the world in which it does business.

## About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at [www.juniper.net](http://www.juniper.net).

